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PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 11 September 2000 (11.09.00)	
International application No. PCT/US99/28013	Applicant's or agent's file reference PF-0629 PCT
International filing date (day/month/year) 23 November 1999 (23.11.99)	Priority date (day/month/year) 23 November 1998 (23.11.98)
Applicant HILLMAN, Jennifer, L. et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 06 June 2000 (06.06.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Manu Berrod Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PF-0629 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 99/ 28013	International filing date (day/month/year) 23/11/1999	(Earliest) Priority Date (day/month/year) 23/11/1998
Applicant INCYTE PHARMACEUTICALS, INC. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 11 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/28013

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 19,20 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 17 18 20
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheets

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
claims 1-20 partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-20 (partially)

A protein with amino acid with seq.id. 1 and corresponding nucleotide sequence with seq.id. 30 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

2. Claims: 1-20 (partially)

A protein with amino acid with seq.id.2 and corresponding nucleotide sequence with seq.id. 31 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

3. Claims: 1-20 (partially)

A protein with amino acid with seq.id.3 and corresponding nucleotide sequence with seq.id. 32 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

4. Claims: 1-20 (partially)

A protein with amino acid with seq.id.4 and corresponding nucleotide sequence with seq.id. 33 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

5. Claims: 1-20 (partially)

A protein with amino acid with seq.id.5 and corresponding nucleotide sequence with seq.id. 34 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

6. Claims: 1-20 (partially)

A protein with amino acid with seq.id.6 and corresponding nucleotide sequence with seq.id. 35 , method for detecting a polynucleotide, expression vector ,host cell , method for

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

7. Claims: 1-20 (partially)

A protein with amino acid with seq.id.7 and corresponding
nucleotide sequence with seq.id. 36 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

8. Claims: 1-20 (partially)

A protein with amino acid with seq.id.8 and corresponding
nucleotide sequence with seq.id. 37 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

9. Claims: 1-20 (partially)

A protein with amino acid with seq.id.9 and corresponding
nucleotide sequence with seq.id. 38 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

10. Claims: 1-20 (partially)

A protein with amino acid with seq.id.10 and corresponding
nucleotide sequence with seq.id. 39 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

11. Claims: 1-20 (partially)

A protein with amino acid with seq.id.11 and corresponding
nucleotide sequence with seq.id. 40, method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

12. Claims: 1-20 (partially)

A protein with amino acid with seq.id.12 and corresponding nucleotide sequence with seq.id. 41 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

13. Claims: 1-20 (partially)

A protein with amino acid with seq.id.13 and corresponding nucleotide sequence with seq.id. 42 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

14. Claims: 1-20 (partially)

A protein with amino acid with seq.id.14 and corresponding nucleotide sequence with seq.id. 43 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

15. Claims: 1-20 (partially)

A protein with amino acid with seq.id.15 and corresponding nucleotide sequence with seq.id. 44 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

16. Claims: 1-20 (partially)

A protein with amino acid with seq.id.16 and corresponding nucleotide sequence with seq.id. 45 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

17. Claims: 1-20 (partially)

A protein with amino acid with seq.id.17 and corresponding nucleotide sequence with seq.id. 46 , method for detecting a polynucleotide, expression vector ,host cell , method for

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

18. Claims: 1-20 (partially)

A protein with amino acid with seq.id.18 and corresponding
nucleotide sequence with seq.id. 47 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

19. Claims: 1-20 (partially)

A protein with amino acid with seq.id.19 and corresponding
nucleotide sequence with seq.id. 48 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

20. Claims: 1-20 (partially)

A protein with amino acid with seq.id.20 and corresponding
nucleotide sequence with seq.id. 49 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

21. Claims: 1-20 (partially)

A protein with amino acid with seq.id.21 and corresponding
nucleotide sequence with seq.id. 50 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

22. Claims: 1-20 (partially)

A protein with amino acid with seq.id.22 and corresponding
nucleotide sequence with seq.id. 51 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

23. Claims: 1-20 (partially)

A protein with amino acid with seq.id.23 and corresponding nucleotide sequence with seq.id. 52 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

24. Claims: 1-20 (partially)

A protein with amino acid with seq.id.24 and corresponding nucleotide sequence with seq.id. 53 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

25. Claims: 1-20 (partially)

A protein with amino acid with seq.id.25 and corresponding nucleotide sequence with seq.id. 54 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

26. Claims: 1-20 (partially)

A protein with amino acid with seq.id.26 and corresponding nucleotide sequence with seq.id. 55 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

27. Claims: 1-20 (partially)

A protein with amino acid with seq.id.27 and corresponding nucleotide sequence with seq.id. 56 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

28. Claims: 1-20 (partially)

A protein with amino acid with seq.id.28 and corresponding nucleotide sequence with seq.id. 57 , method for detecting a polynucleotide, expression vector ,host cell , method for

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

29. Claims: 1-20 (partially)

A protein with amino acid with seq.id.29 and corresponding
nucleotide sequence with seq.id. 58 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 17 18 20

Claims 17,18,20 refer to an antagonist and agonist and the use of antagonist of polypeptide of claim 1 without giving a true technical characterization. Moreover , no such compound is defined in the application . In consequence, the scope of said claims is ambiguous and vague , and their subject-matter is not sufficiently disclosed and supported (art.5 and 6 PCT) . No search can be carried out for such speculative claims the wording of which, is in fact , a mere recitation of the results to be achieved .

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/28013

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C07K16/18 A61K38/17 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MOOSLEHNER K ET AL: "STRUCTURE AND EXPRESSION OF A GENE ENCODING A PUTATIVE GTP-BINDING PROTEIN IDENTIFIED BY PROVIRUS INTEGRATION IN A TRANSGENIC MOUSE STRAIN" MOLECULAR AND CELLULAR BIOLOGY 1991, vol. 11, no. 2, 1991, pages 886-893, XP000891270 ISSN: 0270-7306 abstract; figure 1 ---	1-12
A	WO 98 37196 A (LUDWIG INST CANCER RES) 27 August 1998 (1998-08-27) abstract; claims 1-52; examples 1-8 ---	1-20
A	WO 94 16069 A (SCHERING CORP ; NAKAFUKU MASATO (JP); KAZIRO YOSHITO (JP)) 21 July 1994 (1994-07-21) abstract; claims 1-39 ---	1-6,9-15
-/-		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

24 March 2000

Date of mailing of the international search report

05. 07. 00

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gurdjian, D

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/28013

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	W0 91 15582 A (CETUS CORP) 17 October 1991 (1991-10-17) abstract; claims 1-46; example 10 ---	1-16, 19, 20
A	W0 90 00607 A (CETUS CORP) 25 January 1990 (1990-01-25) abstract; claims 1-55; figures 3,4 -----	1-14

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/28013

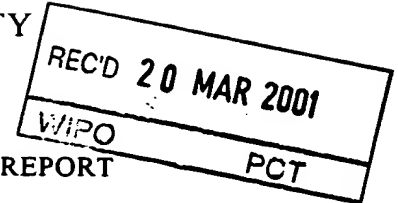
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9837196 A	27-08-1998	AU 6661298 A EP 0981613 A	09-09-1998 01-03-2000
WO 9416069 A	21-07-1994	AU 6083894 A CA 2153486 A EP 0679185 A JP 8507204 T	15-08-1994 21-07-1994 02-11-1995 06-08-1996
WO 9115582 A	17-10-1991	AU 7554691 A EP 0537155 A	30-10-1991 21-04-1993
WO 9000607 A	25-01-1990	US 5104975 A AT 156518 T AU 627764 B AU 4034989 A DE 68928242 D DE 68928242 T EP 0466688 A EP 0649908 A US RE35171 E US 5234839 A US 5760203 A US 5763573 A US 5830684 A	14-04-1992 15-08-1997 03-09-1992 05-02-1990 11-09-1997 18-12-1997 22-01-1992 26-04-1995 05-03-1996 10-08-1993 02-06-1998 09-06-1998 03-11-1998

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference PF-0629 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/28013	International filing date (day/month/year) 23 NOVEMBER 1999	Priority date (day/month/year) 23 NOVEMBER 1998
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant INCYTE PHARMACEUTICALS, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 06 JUNE 2000	Date of completion of this report 07 FEBRUARY 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer TEKCHAND SAIDHA Telephone No. (703) 308-0196 TERRY J. DEY PARALEGAL SPECIALIST TECHNOLOGY CENTER 1600

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/28013

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed☒ the description:

pages 1-75 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

☒ the claims:

pages 76-77 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

☒ the drawings:

pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

☒ the sequence listing part of the description:

pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
☒ the claims, Nos. NONE
☒ the drawings, sheets/fig NONE

5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/28013

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

Please See Supplemental Sheet.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☐ the parts relating to claims Nos. .

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/28013

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims	<u>NONE</u>	YES
	Claims	<u>1-15</u>	NO
Inventive Step (IS)	Claims	<u>NONE</u>	YES
	Claims	<u>1-15</u>	NO
Industrial Applicability (IA)	Claims	<u>1-15</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1-15 lack novelty under PCT Article 33(2) as being anticipated by Mooslehner et al. [Molecular and Cellular Biology, Feb. 1991, Vol. 11, No. 2, p 886-893]. Mooslehner et al. disclose the nucleotide and the amino acid sequences (Figure 1) and expression of a gene encoding GTP-binding protein. Claims 1 & 9 recite the phrase "and fragments thereof" referring to isolated DNA or RNA (or polynucleotide) or polypeptide. There is no limitation present in the claims which would restrict the size of the claimed polynucleotide fragments. Di- and tri- nucleotides are well known in the art of molecular biology and chemistry and are encompassed by the scope of these claims. For example, Applicants' SEQ ID NO : 30 (nucleotides 361-363) match Mooslehner et al. nucleotides 411-413 of Figure 1. The reference further teaches vectors, host cells and method of expression of such a fragment encompassed by the mouse gene (p 887-891) which would hybridize to a polynucleotide of claim 6. Therefore, the claims are anticipated.

----- NEW CITATIONS -----

NONE

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): A61K 38/51; C12N 9/10, 1/20, 15/00; C07H 21/04 and US Cl.: 424/94.5; 435/193, 252.3, 320.1; 536/23.2; 530/350

IV. LACK OF UNITY OF INVENTION:

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2, and 13.3 is not complied with for the following reasons:

As applicant was previously notified this International Preliminary Examining Authority has found plural inventions claimed in the International Application covered by the claims indicated below:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s)1-15, drawn to purified polypeptide (SEQ ID NO : 1) encoded by nucleic acid of SEQ ID NO : 30, vector, host cells, method of making the polypeptide recombinantly, and composition comprising the polypeptide.

Group II, claim(s) 16, drawn to antibody.

Group III, claim(s)17-18, drawn to agonist and antagonist.

Group IV, claims 19-20, drawn to a method of treating or preventing disorder associated with increased expression of GTPAP.

and it considers that the International Application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated below:

The inventions listed as Groups I-IV do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I has the special technical feature of the nucleotide sequence encoding human GTPase of SEQ ID NO : 1, which groups II-IV do not share. Group II has the special technical feature of an antibody which Groups I and III-IV do not share. Group III has the special technical feature of an agonist or antagonist which Groups I-II and IV do not share. Group IV has the special technical feature of an method of increased expression which Groups I-III do not share.

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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			(43) International Publication Date: 2 June 2000 (02.06.00)
(21) International Application Number: PCT/US99/28013			CA 94040 (US). TANG, Y., Tom [CN/US]; 4230 Ranwick Court, San Jose, CA 95118 (US). BANDMAN, Olga [US/US]; 366 Anna Avenue, Mountain View, CA 94043 (US). LAL, Preeti [IN/US]; 2382 Lass Drive, Santa Clara, CA 95054 (US). YUE, Henry [US/US]; 826 Lois Avenue, Sunnyvale, CA 94087 (US). LU, Dyung, Aina, M. [US/US]; 55 Park Belmont Place, San Jose, CA 95136 (US). BAUGHN, Mariah, R. [US/US]; 14244 Santiago Road, San Leandro, CA 94577 (US). YANG, Junming [CN/US]; 7136 Clarendon Street, San Jose, CA 95129 (US). AZIMZAI, Yalda [US/US]; 2045 Rock Springs Drive, Hayward, CA 94545 (US).
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(30) Priority Data: 60/109,592 23 November 1998 (23.11.98) US 60/118,610 4 February 1999 (04.02.99) US 60/127,990 6 April 1999 (06.04.99) US			
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications US 60/109,592 (CIP) Filed on 23 November 1998 (23.11.98) US 60/118,610 (CIP) Filed on 4 February 1999 (04.02.99) US 60/127,990 (CIP) Filed on 6 April 1999 (06.04.99)			
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(54) Title: GTPASE ASSOCIATED PROTEINS			
(57) Abstract The invention provides human GTPase associated proteins (GTPAP) and polynucleotides which identify and encode GTPAP. The invention also provides expression vectors, host cells, antibodies, agonist, and antagonists. The invention also provides methods for diagnosing, treating, or preventing disorders associated with expression of GTPAP.			

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/28013

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C07K16/18 A61K38/17 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MOOSLEHNER K ET AL: "STRUCTURE AND EXPRESSION OF A GENE ENCODING A PUTATIVE GTP-BINDING PROTEIN IDENTIFIED BY PROVIRUS INTEGRATION IN A TRANSGENIC MOUSE STRAIN" MOLECULAR AND CELLULAR BIOLOGY 1991, vol. 11, no. 2, 1991, pages 886-893, XP000891270 ISSN: 0270-7306 abstract; figure 1 ---	1-12
A	WO 98 37196 A (LUDWIG INST CANCER RES) 27 August 1998 (1998-08-27) abstract; claims 1-52; examples 1-8 ---	1-20
A	WO 94 16069 A (SCHERING CORP ; NAKAFUKU MASATO (JP); KAZIRO YOSHITO (JP)) 21 July 1994 (1994-07-21) abstract; claims 1-39 ---	1-6, 9-15
-/-		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

24 March 2000

Date of mailing of the international search report

05.07.00

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INTERNATIONAL SEARCH REPORT

Intern al Application No

PCT/US 99/28013

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 91 15582 A (CETUS CORP) 17 October 1991 (1991-10-17) abstract; claims 1-46; example 10 ---	1-16, 19, 20
A	WO 90 00607 A (CETUS CORP) 25 January 1990 (1990-01-25) abstract; claims 1-55; figures 3,4 -----	1-14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/28013

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 19,20 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 17 18 20
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
claims 1-20 partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box 1.2

Claims Nos.: 17 18 20

Claims 17,18,20 refer to an antagonist and agonist and the use of antagonist of polypeptide of claim 1 without giving a true technical characterization. Moreover, no such compound is defined in the application. In consequence, the scope of said claims is ambiguous and vague, and their subject-matter is not sufficiently disclosed and supported (art.5 and 6 PCT). No search can be carried out for such speculative claims the wording of which, is in fact, a mere recitation of the results to be achieved.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-20 (partially)

A protein with amino acid with seq.id. 1 and corresponding nucleotide sequence with seq.id. 30 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

2. Claims: 1-20 (partially)

A protein with amino acid with seq.id.2 and corresponding nucleotide sequence with seq.id. 31 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

3. Claims: 1-20 (partially)

A protein with amino acid with seq.id.3 and corresponding nucleotide sequence with seq.id. 32 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

4. Claims: 1-20 (partially)

A protein with amino acid with seq.id.4 and corresponding nucleotide sequence with seq.id. 33 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

5. Claims: 1-20 (partially)

A protein with amino acid with seq.id.5 and corresponding nucleotide sequence with seq.id. 34 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

6. Claims: 1-20 (partially)

A protein with amino acid with seq.id.6 and corresponding nucleotide sequence with seq.id. 35 , method for detecting a polynucleotide, expression vector ,host cell , method for

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

7. Claims: 1-20 (partially)

A protein with amino acid with seq.id.7 and corresponding
nucleotide sequence with seq.id. 36 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

8. Claims: 1-20 (partially)

A protein with amino acid with seq.id.8 and corresponding
nucleotide sequence with seq.id. 37 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

9. Claims: 1-20 (partially)

A protein with amino acid with seq.id.9 and corresponding
nucleotide sequence with seq.id. 38 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

10. Claims: 1-20 (partially)

A protein with amino acid with seq.id.10 and corresponding
nucleotide sequence with seq.id. 39 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

11. Claims: 1-20 (partially)

A protein with amino acid with seq.id.11 and corresponding
nucleotide sequence with seq.id. 40, method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

12. Claims: 1-20 (partially)

A protein with amino acid with seq.id.12 and corresponding nucleotide sequence with seq.id. 41 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

13. Claims: 1-20 (partially)

A protein with amino acid with seq.id.13 and corresponding nucleotide sequence with seq.id. 42 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

14. Claims: 1-20 (partially)

A protein with amino acid with seq.id.14 and corresponding nucleotide sequence with seq.id. 43 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

15. Claims: 1-20 (partially)

A protein with amino acid with seq.id.15 and corresponding nucleotide sequence with seq.id. 44 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

16. Claims: 1-20 (partially)

A protein with amino acid with seq.id.16 and corresponding nucleotide sequence with seq.id. 45 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

17. Claims: 1-20 (partially)

A protein with amino acid with seq.id.17 and corresponding nucleotide sequence with seq.id. 46 , method for detecting a polynucleotide, expression vector ,host cell , method for

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

18. Claims: 1-20 (partially)

A protein with amino acid with seq.id.18 and corresponding
nucleotide sequence with seq.id. 47 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

19. Claims: 1-20 (partially)

A protein with amino acid with seq.id.19 and corresponding
nucleotide sequence with seq.id. 48 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

20. Claims: 1-20 (partially)

A protein with amino acid with seq.id.20 and corresponding
nucleotide sequence with seq.id. 49 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

21. Claims: 1-20 (partially)

A protein with amino acid with seq.id.21 and corresponding
nucleotide sequence with seq.id. 50 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

22. Claims: 1-20 (partially)

A protein with amino acid with seq.id.22 and corresponding
nucleotide sequence with seq.id. 51 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

23. Claims: 1-20 (partially)

A protein with amino acid with seq.id.23 and corresponding nucleotide sequence with seq.id. 52 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

24. Claims: 1-20 (partially)

A protein with amino acid with seq.id.24 and corresponding nucleotide sequence with seq.id. 53 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

25. Claims: 1-20 (partially)

A protein with amino acid with seq.id.25 and corresponding nucleotide sequence with seq.id. 54 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

26. Claims: 1-20 (partially)

A protein with amino acid with seq.id.26 and corresponding nucleotide sequence with seq.id. 55 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

27. Claims: 1-20 (partially)

A protein with amino acid with seq.id.27 and corresponding nucleotide sequence with seq.id. 56 , method for detecting a polynucleotide, expression vector ,host cell , method for producing a polypeptide , pharmaceutical composition , antibody , agonist and antagonist , method for preventing a disorder

28. Claims: 1-20 (partially)

A protein with amino acid with seq.id.28 and corresponding nucleotide sequence with seq.id. 57 , method for detecting a polynucleotide, expression vector ,host cell , method for

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

29. Claims: 1-20 (partially)

A protein with amino acid with seq.id.29 and corresponding
nucleotide sequence with seq.id. 58 , method for detecting a
polynucleotide, expression vector ,host cell , method for
producing a polypeptide , pharmaceutical composition ,
antibody , agonist and antagonist , method for preventing a
disorder

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/28013

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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